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## THE NOCTUID MOTH *ANNAPHILA BAUERI*

WITH NOTES ON ITS HABITS

JOHN S. BUCKETT

Department of Entomology,  
University of California,  
Davis, California

SINCE THE DISCOVERY of *Annaphila baueri* Rindge & Smith in the late 1940's, and since the original description, many additional specimens have been collected. The type locality is Anderson Springs, four miles northwest of Middletown, Lake County, California, and until recently the species was known only from this immediate vicinity. In the early 1960's the author, and Mr. Bauer (for whom the species is named) discovered other collecting areas for *baueri*, one of which is to the north of the type locality near Kelsey Creek, Lake County, another area being on Mt. Sanhedrin, Mendocino County. Mr. C. Henne also discovered specimens in San Bernardino County which answer to the description of *baueri*, thus extending the range of the species far to the south. Thus far, it has only been collected in, and is probably restricted to, California.

The species was described from specimens collected at an altitude of 1400 feet above sea level. The Kelsey Creek specimens were collected at an altitude of over 2500 feet, the Mt. Sanhedrin specimens at an altitude of over 3000 feet, and the southern specimens were collected at an altitude of 5000 feet. The species flies during February, March, and April, with early to mid March being the peak of flight period for the northern populations.

*A. baueri* is a strong, erratic flier, and is quite difficult to secure while on the wing; it is more easily collected while at rest or when feeding. The author has taken specimens of *baueri* while they were feeding on Baby Blue-eyes (*Nemophila menziesii*), Parry's Manzanita (*Arctostaphylos manzanita*), White Alder (*Alnus rhombifolia*), and the Arroyo Willow (*Salix lasiolepis*). Many specimens were collected from dead limbs or branches, where the moths were apparently resting or sunning themselves. One can also collect speci-



- Fig. 1. Paratype female, *Annaphila baueri* Rindge & Smith, Anderson Springs, Lake County, California, 26 March 1949 (W. R. Bauer).
- Fig. 2. Male, *A. baueri*. Kelsey Creek, 3 miles west of Cobb, Lake County, California, 13 March 1961 (J. S. Buckett).
- Fig. 3. Male, *A. baueri*, same locality as figure 2, 17 March 1960 (W. R. B. & J. S. B.).
- Fig. 4. Male, *A. baueri*, same locality as figure 2, 7 March 1959 (W. R. B. & J. S. B.).
- Fig. 5. Male, *A. abdita* Rindge & Smith, same data as figure 3.
- Fig. 6. Female, *A. abdita*, same locality and collectors as in figure 3, 18 March 1960.

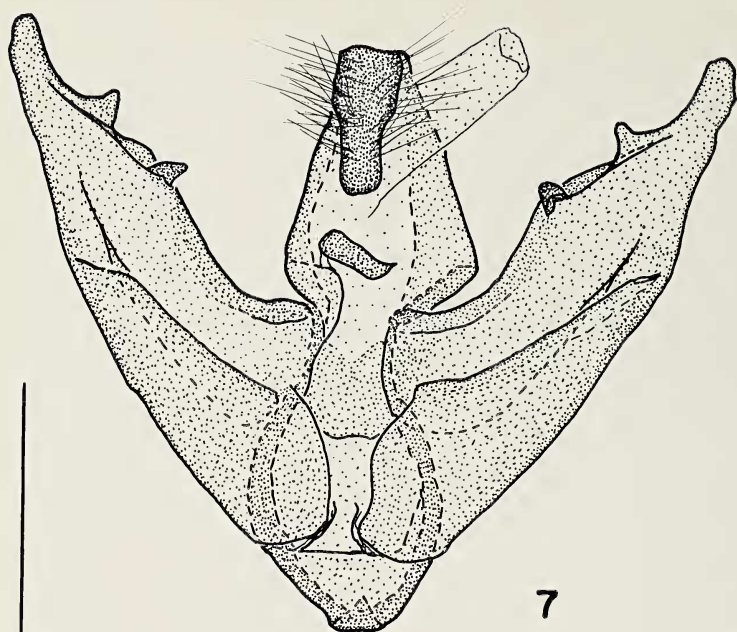
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The optimal temperature for flight of *baueri* has not been ascertained, but the minimal temperature for flight seems to be very near 65°F. It will not fly if the wind is at all strong, nor will it fly if the sun is not showing to some degree. Hazy days can be very good collecting, providing the temperature is adequate. If the temperature reaches the high seventies, or the low eighties, it is almost impossible to collect many specimens due to their ultrakeen alertness accompanied with the fact they are very "warmed up". The slightest quick movement, or the first snapping of a twig or dead leaf will send the specimen into a very erratic flight which may be within ten feet of the ground, or may be at much higher altitudes, thus making it almost impossible to catch.

One can take an occasional specimen of *baueri* before noon, but generally the majority of the specimens are collected between 1 PM and 3 PM when they are most concentrated on feeding. On the fifteenth of March, 1960, Mr. Bauer and the author collected specimens of *baueri* at regular intravels until 5 PM, and one specimen was collected at 5:45 PM! These specimens were apparently coming into a secluded wooded area for the night where they alighted on dead limbs in a burned over area. Two years later this area was again burned over, this time rendering the terrain useless for *Annaphila* collecting.

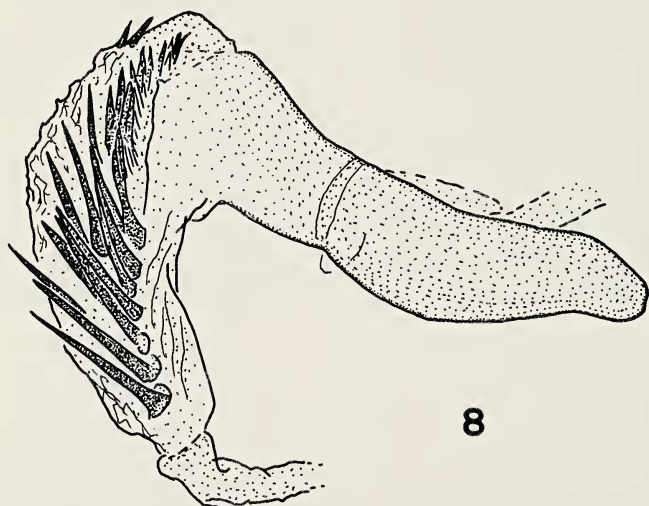
Rindge & Smith (1952) give a very adequate description of *baueri*, and the only supplemental data the author presents here is greater variation in size and in color, range extensions, and a plate showing color variation. (Figs. 1-4). For notes on the immature stages of *baueri*, see Comstock and Henne (1964).

The male genitalia is presented here with the aedeagus illustrated, being inflated to more clearly show the form and armature of the vesica. (Figs. 7, 8). *A. baueri* is quite a distinct species, its closest relative being *abdita* Rindge & Smith, which is much smaller. The maculation of the two species is similar, yet each is distinctly different, as can be seen by the colored plate of the adults. (Figs. 5, 6). Also Rindge & Smith (op. cit.) state in reference to *baueri* "In this species the front is strongly raised, with the apex truncate, while in *abdita* the front has a strong transverse ridge across the top and bottom." This characteristic holds well for each species.



1mm

7



8

Fig. 7. Topotype male, *A. baueri*, genitalia minus aedeagus. Same locality as in figure 1, 20 February 1955 (W. R. B. & J. S. B.), Bauer-Buckett slide number 63B20-43.

Fig. 8. *A. baueri*, inflated aedeagus. Same data as in figure 7.

The specimens examined are as follows:

CALIFORNIA, Anderson Springs, Lake County, 2 paratype females, 26 March 1949 (W. R. Bauer); 1 female, 12 February 1955 (W. R. B. & J. S. Buckett); 1 male, 1 female, 20 February 1955 (W. R. B. & J. S. B.); Kelsey Creek, 3 miles west of Cobb, Lake County, 2 males, 2 females, 1 March 1959 (W. R. B. & J. S. B.); 1 male, 3 females, 8 March 1959 (W. R. B. & J. S. B.); 2 females, 14 March 1960 (W. R. B. & J. S. B.); 4 males, 2 females, 15 March 1960 (W. R. B. & J. S. B.); 2 females, 16 March 1960 (W. R. B. & J. S. B.); 1 female, 17 March 1960 (W. R. B. & J. S. B.); 6 males, 1 female, 13 March 1962 (J. S. B.); 1 male, 1 female, 17 March 1962 (J. S. B.); 3 males, 2 females, 20 February 1965 (W. R. B., J. S. B. & M. R. Gardner); 2 males, 6 females, 21 February 1965 (W. R. B., J. S. B. & M. R. G.); Mt. Sanhedrin, Mendocino County, 1 female, 23 March 1960 (W. R. B. & J. S. B.); Cedar Pines Park, near Crestline, San Bernardino Mountains, San Bernardino County, 1 male, 13 April 1960, 5000 feet elevation (C. Henne), with affixed label reading "Alighting on dried vegetation, Mid-afternoon".

The specimens used in this work are in the Bauer-Buckett Collection, Davis, and the Entomology Collection, University of California, Davis, California.

#### REFERENCES

- RINDGE, F. H., and C. I. SMITH, 1952. A revision of the genus *Annaphila* Grote (Lepidoptera, Phalaenidae). *Bull. Am. Mus. Nat. Hist.* 98(3): 191-256, including plates.
- COMSTOCK, J. A. and C. HENNE, 1964. Studies in Life Histories of North American Lepidoptera. *Jour. Res. Lep.* 3(3): 173-191.